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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,326	02/11/2004	Marcel Mathijs Theodore Marie Dierichs	081468-0308270	8555

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PILLSBURY WINTHROP SHAW PITTMAN, LLP
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MCLEAN, VA 22102

EXAMINER

RAYMOND, BRITTANY L

ART UNIT	PAPER NUMBER
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1756

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/775,326

Applicant(s)DIERICH, MARCEL MATHIJS
THEODORE MARIE**Examiner**

Brittany Raymond

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 12-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 22-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/2004/3/9/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 1-11 and 22-31 in the reply filed on 2/1/2007 is acknowledged.
2. Claims 12-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/1/2007.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 4, the recited format does not comply with accepted U.S. Patent practice with regard to the recitation of Markush grouping of claim elements. Phrases using "comprising" should recite elements in the alternative (i.e. "comprising A, B, C or D"), whereas closed sets ("consisting of") should recite elements as "selected from the group consisting of A, B, C and D." In the instant case, the phrase "has a thickness one of" is interpreted as open language, similar to "comprising" (See MPEP 2173.05 (h)).

As to claims 3 and 4, there is no range because the use of "at least" makes the claims open-ended.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 5-8, 10, 11, 22, 26-29, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin (U.S. Patent Application 2005/0147920).

Lin discloses a method for immersion lithography comprising: providing a substrate with a photoresist layer on top (Paragraph 0016), covering the photoresist layer with a protection layer that is impermeable by an immersion medium (Paragraph 0018), immersing the substrate in an immersion medium, which fills a space between the final optical element and the substrate (Paragraph 0006), and directing a light source through a mask, immersion medium and protective film to pattern the photoresist layer (Claim 21), as recited in claims 1 and 22 of the present invention. The protective layer is thick enough to maintain a barrier between the photoresist layer and the immersion medium and to avoid bubble formation (Paragraphs 0019 and 0021), as recited in claims 10 and 22 of the present invention. Lin discloses that the protective layer covers the surface of the photoresist layer (Paragraph 0018), as recited in claims 11 and 31 of the present invention. Lin states that the immersion medium has a refractive index greater than 1 (Paragraph 0006), as recited in claims 7 and 28 of the

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present invention. Lin also states that the protective film and the immersion medium have nearly matching indices (Paragraph 0018), as recited in claims 5, 6, 26, and 27 of the present invention. Lin discloses that the protective layer has a zero dissolution rate in the immersion medium (Paragraph 002), as recited in claims 8 and 29 of the present invention.

Lin teaches every limitation of claims 1, 5-8, 10, 11, 22, 26-29, and 31 and thus anticipates the claims.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 2-4, 9, 23-25, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent Application 2005/0147920).

The teachings of Lin have been discussed in paragraph 6 above.

Lin fails to disclose that another protective layer is present between the radiation sensitive layer and the non-radiation sensitive layer. Lin also fails to disclose that the thickness of the non-radiation sensitive layer is greater than the wavelength of radiation used, and that said thickness is at least 5 micrometers and at least 10 micrometers.

Lin discloses that the protective film seals the photoresist layer and any other layer beneath from the immersion medium (Paragraph 0019), as recited in claims 9 and 30. Lin states that the thickness of the protective film is less than 1000 Angstroms (Claim 10), or 0.1 microns. Lin also states that the thickness of the protective film exceeds the thickness that is etched away by its dissolution in the immersion medium (Claim 22).

It would have been obvious to one of ordinary skill in this art, at the time of invention by applicant, to have provided another layer between the protective layer and photoresist layer, as suggested by Lin, because Lin teaches that other layers of materials can be added underneath the protective layer. It would have also been obvious to have used a thicker protective layer because this would keep particles and bubbles further from the photoresist layer and Lin teaches that it needs to be thick enough to keep the layer from dissolving completely in the immersion medium. It would be obvious to one of ordinary skill that a layer of this thickness would be greater than the typical wavelength of a light used in photolithography.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brittany Raymond whose telephone number is 571-272-


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6545. The examiner can normally be reached on Monday through Friday, 8:00 a.m. - 4:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KATHLEEN DUDA
PRIMARY EXAMINER